



Louisville Metro Air Pollution Control District
701 W. Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137



28 June 2016

Federally Enforceable District Origin Operating Permit Statement of Basis

Owner: Koroseal Interior Products, LLC

Source: Koroseal Interior Products, LLC

Plant Location: 7929 National Turnpike, Louisville, KY 40214

Date Application Received: 06 June 2014; 14 July 2014; 22 December
2014; 17 February 2015; 2 July 2015

Public Comment Date: 28 June 2016

District Engineer: Lana Stilger

Permit No: O-1847-16-F

Plant ID: 1847 **SIC Code:** 2754

NAICS: 323111

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}), unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment area for sulfur dioxide (SO₂).

Application Type/Permit Activity:

- Initial Issuance
- Permit Revision
 - Administrative
 - Minor
 - Significant
- Permit Renewal

Compliance Summary:

- Compliance certification signed
- Source is out of compliance
- Compliance schedule included
- Source is operating in compliance

I. Source Information

1. **Product Description:** Koroseal Interior Products, LLC is a commercial wallcovering production plant with equipment that includes rotogravure printers, laminators, ovens, and an adhesive mixer. It was previously permitted at another location under Plant ID 1173 (RJF International Corporation).
2. **Process Description:** Rotogravure printing, laminating, and mixing.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Rotogravure Printing presses and application of adhesive with associated ovens.
U2	Mixing of adhesive.
IA – 1	Boilers
IA – 2	Spray Booth and Abrasive Blasting

5. **Fugitive Sources:** There are no fugitive sources identified by the source.
6. **Permit Revisions:**

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	O-1847-15-F		6/28/2016	Initial	Entire Permit	Initial Permit Issuance

7. **Construction Permit History:**

Permit No.	Issue Date	Description
F-14-1013-C	7/30/2014	Initial Construction Permit Issuance for a wallpaper printing facility with equipment that includes rotogravure printers, laminators, ovens, and an adhesive mixer.
C-1847-1000-15-F	7/30/2015	Construction Permit Renewal; construction not completed.

Permit No.	Issue Date	Description
C-1847-1001-15-F	2/23/2015	Construction Permit for three nickel plating tanks with a tank cover in an enclosed room controlled by a baghouse.
C-1847-1001-15-F(R1)	4/08/2015	Construction Permit Revision to update the cover page process equipment description to include the baghouse control device.

8. Emission Summary:

Pollutant	District Calculated Actual Emissions (tpy) 2014 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0.1605	No
NO _x	0.1911	No
SO ₂	0.0011	No
PM ₁₀	0.0036	No
VOC	0.4002	Yes
Total HAPs	0.0036	No
Single HAP	0.0036	No

9. Applicable Requirements:

PSD 40 CFR 60 SIP 40 CFR 63
 NSR 40 CFR 61 District-Origin Other

10. Referenced MACT Federal Regulations: 40 CFR 63, Subpart WWWWWW

11. Referenced non-MACT Federal Regulations: 40 CFR 60, Subpart FFF

II. Regulatory Analysis

- Acid Rain Requirements:** Koroseal Interior Products, LLC is not subject to the Acid Rain Program.
- Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Koroseal Interior Products, LLC does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. **Prevention of Accidental Releases 112(r):** Koroseal Interior Products, LLC does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** Koroseal Interior Products, LLC is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
5. **Basis of Regulation Applicability**

- a. **Plant-wide**

Koroseal Interior Products, LLC is a potential major source for the pollutant VOC. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limits of the criteria pollutant VOC < 100 ton/yr. The source is not major for Greenhouse Gases.

Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. Koroseal Interior Products, LLC does not allow emissions of any TAC to exceed Environmentally Acceptable (EA) levels. Natural gas combustion is *de minimis* by definition. The TAC emissions for the blasting booth (E47) are *de minimus* uncontrolled. The TAC emissions for the nickel plating equipment (E46, E48, E49) have been determined by the District to be *de minimus* controlled.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued to submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. **Emission Unit U1 – Rotogravure printing presses and laminator**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E1: Top Dress Oven Custom	N/A	TBD	6.29; 40 CFR 60 Subpart FFF	Regulation 6.29 establishes the requirements for VOC emission from Graphic Arts Facilities using Rotogravure or Flexographic Printing Regulation 40 CFR 60 Subpart FFF establishes the requirements for VOC emissions from Flexible Vinyl and Urethane Coating and Printing for which construction or modification happened after January 18, 1983
E2: #1 Laminator Liberty Machine	30 yds/min	TBD	6.29, 40 CFR 60 Subpart FFF	
E3: Top Dress Station Custom	N/A	TBD	6.29; 40 CFR 60 Subpart FFF	
E5: Electric Oven	N/A	10/14/2014	6.29	
E6: #1 Printer Custom	30 yds/min	10/14/2014	6.29; 40 CFR 60 Subpart FFF	
E7: #2 Printer DCI	30 yds/min	6/6/2014	6.29; 40 CFR 60 Subpart FFF	
E8/E9: Maxon/Radiant Energy 456OP2	6.4 MMBtu/hr	TBD	6.29	
E10: #4 Printer W& H/6425	40 yds/min	TBD	6.29; 40 CFR 60 Subpart FFF	
E11: #4 Laminator Custom	30 yds/min	TBD	6.29; 40 CFR 60 Subpart FFF	
E12: Oven #1 Pyradia/SAU	2.0 MMBtu/hr	TBD	6.29	
E13: Oven #2 Pyradia/SAU	2.0 MMBtu/hr	TBD	6.29	
E14: Oven #3 Pyradia/SAU	2.0 MMBtu/hr	TBD	6.29	
E15: Oven #4 Pyradia/SAU	2.0 MMBtu/hr	TBD	6.29	
E16: #5 Printer Rotomec/1625	50 yds/min	TBD	6.29; 40 CFR 60 Subpart FFF	
E15A: Laminator TBD	30 yds/min	TBD	6.29; 40 CFR 60 Subpart FFF	
E16A: Top Dress Applicator/TBD	30 yds/min	TBD	6.29; 40 CFR 60 Subpart FFF	
E21: Top Dress Electric Oven	N/A	12/14/2014	6.29; 40 CFR 60 Subpart FFF	
E22: #5 Laminator Custom	30 yds/min	10/14/2014	6.29; 40 CFR 60 Subpart FFF	
E23: Top Dress Over Pyradia/SAU	30 yds/min	6/6/2014	6.29; 40 CFR 60 Subpart FFF	
E24: Electric Oven	N/A	TBD	6.29	
E25: Electric Oven	N/A	TBD	6.29	
E26: Oven #3 Pyradia/SAU	2.0 MMBtu/hr	TBD	6.29	
E27: Oven #4 Pyradia/SAU	2.0 MMBtu/hr	TBD	6.29	

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E28: #6 Printer Romotec	40 yds/hr	3/29/2015	6.29; 40 CFR 60 Subpart FFF	Regulation 6.29 establishes the requirements for VOC emission from Graphic Arts Facilities using Rotogravure or Flexographic printing
E29:#6 Laminator Lembo/1988	30 yds/hr	3/29/2015	6.29; 40 CFR 60 Subpart FFF	
E29A: Laminator Oven Pyradia/SAU	2.0 MMBtu/hr	3/29/2015	6.29; 40 CFR 60 Subpart FFF	
E30: Oven #1 Pyradia/SAU	2.0 MMBtu/hr	11/25/2014	6.29	
E31: Oven #2 Pyradia/SAU	2.0 MMBtu/hr	11/25/2014	6.29	
E32: Oven #3 Pyradia/SAU	2.0 MMBtu/hr	11/25/2014	6.29	
E33: Oven #4 Pyradia/SAU	2.0 MMBtu/hr	11/25/2015	6.29	
E34: Oven #5 Pyradia/SAU	2.0 MMBtu/hr	11/25/2015	6.29	
E35: #7 Printer Cerutti/1693 1979	50 yds/min	11/25/2015	6.29; 40 CFR 60 Subpart FFF	
E36: #7 Laminator Custom	30 yds/min	12/14/2014	6.29; 40 CFR 60 Subpart FFF	
E39: #7 Laminator Electric Oven	N/A	12/14/2014	6.29; 40 CFR 60 Subpart FFF	Regulation 40 CFR 60 Subpart FFF establishes the requirements for VOC emissions from Flexible Vinyl and Urethane Coating and Printing for which construction or modification happened after January 18, 1983
E45 (IA): Silver Coating Spray Booth	45 gal/yr	2015	7.08	
E46: Nickel Plating – Tank 1 Custom	150 cfm	2015	2.17, 5.00, 5.01, 5.2140 CFR 63 Subpart WWWWWW	Regulation 2.17 establishes the requirements for Federally Enforceable District Origin Operating Permits Regulation CFR 63 Subpart WWWWWW establishes the requirement for HAP emissions for Planting and Polishing Facilities.
E47 (IA): Abrasive Blasting - Custom	268 lb/hr	2015	7.08	Regulation 7.08 establishes the requirements for PM emissions
E48: Nickel Plating – Tank 2 Custom	150 cfm	2015	2.17, 5.00, 5.01, 5.21, 40 CFR 63 Subpart WWWWWW	Regulation 2.17 establishes the requirements for Federally Enforceable District Origin Operating Permits
E49: Nickel Plating – Tank 3 Custom	150 cfm	2015	2.17, 5.00, 5.01, 5.21, 40 CFR 63 Subpart WWWWWW	Regulation CFR 63 Subpart WWWWWW establishes the requirement for HAP emissions for Planting and Polishing Facilities.

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 6.29 establishes VOC content limits for various inks and solvents.
- (b) Regulation 40 CFR 60 Subpart FFF establishes VOC content limits for various inks and solvents. 40 CFR 60 Subpart FFF applies to any affected facility constructed after January 18, 1983 and applies to each rotogravure printing line used to print or coat flexible vinyl or urethane products.

2) **HAPs**

Regulation 40 CFR 63 Subpart WWWW establishes content limits for electroplating tanks that uses one or more of the plating and polishing metal HAP.

3) **TAC**

Regulation 5.20, 5.21, 5.22, and 5.23 establishes requirements for Group II sources to demonstrate environmental acceptability. TAC emissions for nickel plating are de minimis controlled. Therefore, TAC emission limits and operating hour limits have been established.

4) **PM**

In accordance with Regulation 7.08, Table 1, PM Emissions for Emission Points E45 and E47 are 2.34 lb/hr for each process throughput of 1,000 lb/hr or less. A one-time PM compliance demonstration for this equipment was performed on January 12, 2015 and the lb/hr standard cannot be exceeded uncontrolled.

5) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for the processes that commenced construction after September 1, 1976.

c. **Emission Unit U2 – Mixing of Adhesive**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E20: Mixer; Little Ford Daymax	200 gallons	TBD	7.08; and 7.25	Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976 Regulation 7.25 establishes VOC standards for affected facility constructed after June 13, 1979

ii. **Standards/Operating Limits**

1) **VOC**

Regulation 7.25 establishes VOC emissions limits for equipment that a BACT analysis has not been submitted including the mixer. The potential to emit for this equipment is 1.63 tpy. Therefore monitoring, record keeping, and reporting are not required to demonstrate compliance with the limit. But, the company will need to calculate the emissions to show compliance with the less than 100 tpy plant wide limit.

2) **PM**

In accordance with Regulation 7.08, Table 1, PM Emissions for Emission Point E2 (Mixer) is 2.34 lb/hr for process throughput of 1,000 lb/hr or less. A one-time PM compliance demonstration for this equipment was performed on June 9, 2014 and the lb/hr standard can be exceeded uncontrolled. Therefore, controls must be run to meet the PM lb/hr emission limits.

3) **Opacity**

For the mixer: Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for the processes that commenced construction after September 1, 1976.

4) **TAC**

Regulation 5.20, 5.21, 5.22, and 5.23 establish requirements for Group I sources to demonstrate environmental acceptability. There are no TACs associated with this equipment, therefore the TAC generic language is used to account for any raw material changes that contain TACs

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operation flexibility.
5. **Compliance History:** There are no violations for this company.
6. **Calculation Methodology or Other Approved Method:**

Printing and Laminating (U1): Emission factors from AP-42, Chapter 1.4-1: Emission Factors for Nitrogen Oxides and Carbon Monoxide from Natural Gas Combustion and AP-42 Table 1.4-2: Emission Factors for Criteria Pollutants and Green House Gases from Natural Gas Combustion, were used to determine Potential To Emit and confirm limits requested by the source. AP-42 Table 1.4-3: Emission Factors for Speciated Organic Compounds from Natural Gas Combustion were used to calculate HAP emissions. See Table below for Emission Factors.

Uncontrolled VOC emissions from the laminator and printing presses shall be calculated using the following equations:

$$\text{VOC (lb)} = \text{coating used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)}$$

Or

$$\text{VOC (lb)} = \text{coating used (gal)} \times \text{VOC content (lb/gal)}$$

For Nickel Plating (E46, E48, and E49) an equation was used from Guidance for Calculating Maximum Hourly Toxic Air contaminant Emission Rate (June 16, 2005; Bay Area Air Quality Management District; San Francisco, CA).

$$E = (A)(EF) + (20)(w)(Q)$$

Where:

E = nickel emissions, mg/hr

A = Rectifier Capacity, Amps

EF = Nickel emission factor, mg/amp-hr

W = nickel weight fraction in plating bath
 Q = sparging rate, scfm

The nickel emission factor may be developed from the following method:

$$EF, \text{ ni plating (mg/amp-hr)} = (5E-25)(w)(S^{14.923})$$

w = nickel weight fraction in plating bath

S = Bath Surface Tension, dyne/cm (typically ranges from 20-50)

The PM emission factors seen in the table below were used in the District's PTE calculations and determined based on 7% nickel content used in the plating process. These emission factors can be used for the Company's calculations of emissions in lieu of the above equation as long as the maximum nickel content in the plating process is 7%.

Mixing (U2): Emission factors from AP-42 Chapter 6.4 Table 6.4-2: Uncontrolled Emission Factors for Pain and Varnish Manufacturing were used to determine Potential to Emit and confirm limits requested by the source. See Table Below for Emission Factors.

Uncontrolled VOC emissions from the mixer shall be calculated using the following equations:

$$\text{VOC (lb)} = \text{raw material used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)}$$

or

$$\text{VOC (lb)} = \text{raw material used (gal)} \times \text{VOC content (lb/gal)}$$

Uncontrolled PM emissions from the mixer shall be calculated using the following equation:

$$\text{PM (lb)} = \text{solids per batch (770 lb/batch)} \times \text{emission factor (20 lb PM/ton)} / \\ \text{(2000 lb/ton)} \times \text{number of batches (\#batches)}$$

Controlled PM emissions from the mixer shall be calculated using the following equation:

$$\text{PM (lb)} = \text{solids per batch (770 lb/batch)} \times \text{emission factor (20 lb PM/ton)} / \\ \text{(2000 lb/ton)} \times \text{number of batches (\#batches)} \times \text{control efficiency (1 - 0.95)}$$

Insignificant Activities: For the Silver Coating Spray Booth, data from site equipment moving from in Application scaled up to three shifts was used. For Abrasive Blasting, emission factors from AP-42 Chapter 13.2.6 Abrasive Blasting: Table 13.2.6-1 were used to determine Potential to Emit and confirm limits requested by the source. See Table Below for Emission Factors.

For IA-2, the uncontrolled VOC emissions from the spray booth shall be calculated

using the following equations:

$$\text{VOC (lb)} = \text{Raw material used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)}$$

Or

$$\text{VOC (lb)} = \text{Raw material used (gal)} \times \text{VOC content (lb/gal)}$$

Emission Factors and Calculation Methodologies:

Unit ID	Emission Point ID	Emission Point Description	Pollutants	Emission Factors Unit	Uncontrolled Emission Factors	Controlled Emission Factors	Emission Factor Sources
U1	All	Printing	VOC	lb/gal	10.2	n/a	MSDS
		Laminating	VOC	lb/gal	0.032	n/a	MSDS
		Top Dress	VOC	lb/gal	0.83	n/a	MSDS
		Combustion	NO _x	lb/mmcf	100	n/a	AP-42 Table 1.4-1 and AP-42 Table 1.4-2
			CO	lb/mmcf	84	n/a	
			CO ₂	lb/mmcf	120,000	n/a	
			Lead	lb/mmcf	0.0005	n/a	
			N ₂ O	lb/mmcf	2.2	n/a	
			PM	lb/mmcf	7.6	n/a	
			PM ₁₀	lb/mmcf	7.6	n/a	
			SO ₂	lb/mmcf	0.6	n/a	
			Methane	lb/mmcf	2.3	n/a	
			VOC	lb/mmcf	5.5	n/a	
	NH ₃	lb/mmcf	3.2	n/a			
	IA-2 – Silver Coating Spray Booth		VOC/HAP/PM	Mass Balance Method			Data from site equipment moving from in Application scaled up to three shifts.
E46/48/49 – Nickel Plating	all 3 units	HAP	lb/hr	0.0163	0.000815	June 16, 2005; Bay Area Air Quality Management District; San Francisco, CA	
		PM/PM ₁₀	lb/hr	0.0163	0.000815		
		TACs	lb/hr	0.0163	0.000815		
IA-2 – Abrasive Blasting		PM	lb/1000 lb abrasive	2.7	n/a	AP-42 Chapter 13.2.6 Abrasive Blasting: Table 13.2.6-1	
		PM ₁₀		1.3			
		PM _{2.5}		0.13			
U2	E20 - Mixer		PM/PM ₁₀	lb/ton	20	0.211	AP-42 Chapter 6.4 Table 6.4-1: Uncontrolled Emission Factors for Pain and Varnish Manufacturing

7. Insignificant Activities

Equipment	Quantity	PTE (tpy)	Regulation Basis
Boiler #1 Capacity: 1.7 MMBtu/hr	1	0.730 (NO _x) 0.9872 (VOC) for all combustion sources –boilers and ovens	Regulation 1.02
Boiler #2 Capacity: 1.7 MMBtu/hr	1	0.730 (NO _x)	Regulation 1.02
Silver Coating Spray Booth (E45)	1	0.0185 (VOC) 0.0827 (HAP)	Regulation 1.02
Custom Abrasive Blasting Unit Usage: 268 lb/hr (E47)	1	1.53 (PM ₁₀)	Regulation 1.02
Woodworking Equipment	1	0.122 (PM)	Regulation 1.02
Woodworking operation in thermoforming	1	0.172 (PM)	Regulation 1.02

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit, IA-1 (Boilers) and IA-2 (Spray Booth and Abrasive Blasting)

- 7) The Source has one Storage Tank (Non-VOC), Capacity: 5000 gallons and one Solder Melting Pot, Capacity: 4 gallons located on site that does not emit air pollutants.
- a. **IA-1 Equipment – Boilers**

i. **Equipment**

Emission Point	Description	Applicable Regulation	Control ID	Stack ID	Installation Date
IA-1-E1	Natural Gas Boiler #1	7.06	N/A	N/A	2014
IA-1-E2	Natural Gas Boiler #2	7.06	N/A	N/A	2014

ii. **Standards/Operating Limits**

1) **Opacity**

Regulation 7.06 establishes an opacity standard of less than 20%, for the processes that commenced construction after September 1, 1976.

2) **PM**

Regulation 7.06 establishes the PM limit to be less than 0.56 lb/MMBtu actual heat input for each boiler if the total heat input capacity for all boilers at the source is equal to or less than 10 MMBtu/hr.

3) **SO₂**

Regulation 7.06 establishes the SO₂ limit to be 1.0 lb/MMBtu actual heat input for each boiler if the total heat input capacity for all boilers at the source is equal to or less than 145 MMBtu/hr.